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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/869,069	06/22/2001	Mikko Ohvo	P281445	1005

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EXAMINER
ABELSON, RONALD B

ART UNIT	PAPER NUMBER
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/16/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

Office Action Summary	Application No.	Applicant(s)
	09/869,069	OHVO ET AL.
	Examiner	Art Unit
	Ronald Abelson	2616

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>24 January 2007</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-12,14,18,19,21 and 23-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *5 and 30* is/are allowed.

6)☒ Claim(s) *1,3,6-12,14,18,19,21 and 23-29* is/are rejected.

7)☐ Claim(s) *4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the
> art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

2.   Claims 23, 24, and 27 are rejected under 35 U.S.C. 103(a)

as being unpatentable over Chuah (US 6,400,695) in view of

Shimojo (US 5,787,072).

Regarding claim 23, 24, and 27, Chuah teaches a mobile

communications system (fig. 1).

Chuah teaches a first connection leg supporting flow

control on a lower transmission protocol level underlying a user

level (fig. 1 see connection between box 2 and 6, WCDMA, col. 2

lines 1-5, fig. 2 LAC, col. 2 lines 39-41). Note, applicant's

background states LAC supports flow control on a lower

transmission protocol level underlying a user level (spec: pg. 4

lines 1-2).

Chuah teaches an intermediate second connection leg not
supporting flow control on the lower transmission level (fig. 1
see connection Node-B 'connected to box 2' to box 10 to box 14
to Node-B 'connected to box 4', ATM, col. 2 lines 53-58). Note,
applicant's background states ATM does not supporting flow
control on the lower transmission level (pg. 4 line 17-18).

Chuah teaches a third connection leg supporting flow
control on the lower transmission protocol level (fig. 1 see
connection between box 4 and 6, WCDMA, col. 2 lines 1-5, fig. 2
LAC, col. 2 lines 39-41).

Chuah teaches a first network element of the mobile
communications system between the first and second legs (fig. 1
box 6 that is connected to box 2).

Chuah teaches a second network element of the mobile
communications system between the second and third legs (fig. 1
box 6 that is connected to box 4).

Chuah teaches the first leg is at the air interface between
a mobile station and one of the network elements (fig. 1 box 2,
WCDMA, col. 2 lines 1-5).

Although Chuah teaches lower level flow control
information, the reference is silent on the first and second
network elements are configured to tunnel lower level flow

control information through the lower transmission protocol

level of the second leg between said first and third legs in

order to provide end-to-end flow control and thereby data

integrity over the connection on the lower transmission protocol

layer.

Shimojo teaches tunneling flow control information through

the lower transmission protocol level (ATM, col. 1 lines 12-14)

of the second leg between said first and third legs in order to

provide end-to-end flow control and thereby data integrity over

the connection on the lower transmission protocol layer (large

number of switching nodes not having flow control, tunneling,

downstream flow control function will transmit control

information to upstream apparatus, col. 3 lines 48-57). The

examiner corresponds the applicant's second leg with the large

number of switching nodes not having flow control in the

reference.

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of Chuah by tunneling

lower level flow control information from through the ATM

network, as suggested by Shimojo. This modification can be

performed according to the teachings of Shimojo. This

modification would benefit by allowing for the transmission of

flow control information to be transported between the first and second networks.

3.   Claims 1, 14, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (US 6,400,695) in view of Shimojo, and Edholm (US 6,600,721).

Regarding claim 1, 14, and 28, Chuah teaches a mobile communications system (fig. 1).

Chuah teaches a first connection leg supporting flow control on a lower transmission protocol level underlying a user level (fig. 1 see connection between box 2 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41). Note, applicant's background states LAC supports flow control on a lower transmission protocol level underlying a user level (spec: pg. 4 lines 1-2).

Chuah teaches an intermediate second connection leg not supporting flow control on the lower transmission level (fig. 1 see connection Node-B 'connected to box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM, col. 2 lines 53-58). Note, applicant's background states ATM does not supporting flow control on the lower transmission level (pg. 4 line 17-18).

Chuah teaches a third connection leg supporting flow control on the lower transmission protocol level (fig. 1 see

connection between box 4 and 6, WCDMA, col. 2 lines 1-5, fig. 2

LAC, col. 2 lines 39-41).

Chuah teaches a first node between the first and second

legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second node between the second and third

legs (fig. 1 box 6 that is connected to box 4).

Chuah teaches the first leg is at the air interface between

a mobile station and one of the network elements (fig. 1 box 2,

WCDMA, col. 2 lines 1-5).

Although Chuah teaches lower level flow control

information, the reference is silent on tunnelling lower level

flow control information as in-channel signaling through the

lower transmission protocol level of the second leg between said

first and third legs in order to provide end-to-end flow control

and thereby data integrity over the connection on the lower

transmission protocol layer.

Shimojo teaches tunneling flow control information through

the lower transmission protocol level (ATM, col. 1 lines 12-14)

of the second leg between said first and third legs in order to

provide end-to-end flow control and thereby data integrity over

the connection on the lower transmission protocol layer (large

number of switching nodes not having flow control, tunneling,

downstream flow control function will transmit control

information to upstream apparatus, col. 3 lines 48-57). The

examiner corresponds the applicant's second leg with the large

number of switching nodes not having flow control in the

reference.

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of Chuah by tunneling

lower level flow control information from through the ATM

network, as suggested by Shimojo. This modification can be

performed according to the teachings of Shimojo. This

modification would benefit by allowing for the transmission of

flow control information to be transported between the first and

second networks.

Although the combination teaches tunneling, the combination

is silent on tunneling to flow control information using in-

channel/in-band signaling.

Edholm teaches flow control information using in-

channel/in-band signaling (col. 1 lines 36-37).

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of the combination of

Chuah and Shimojo by tunneling the flow control information

using in-band flow control. This modification can be performed

according to the teachings of Edholm. This modification would

benefit the system since separate bands for data and flow

control would not be needed.

4.   Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being

unpatentable over the combination of Chuah, Shimojo, and Edholm

as applied to claim 1 above, and further in view of Akiyoshi (US

5,668,812).

Regarding claim 3, although the combination teaches the

second leg is an ATM connection (Chuah: fig. 1 see connection

Node-B 'connected to box 2' to box 10 to box 14 to Node-B

'connected to box 4', ATM, col. 2 lines 53-58), the combination

is silent on the lower transmission protocol level includes an

ATM adaptation layer.

Akiyoshi teaches an ATM adaptation layer (col.1 lines 39-

43).

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of the combination by

incorporating an ATM adaptation layer, as suggested by Akiyoshi.

Adhering to ATM standards can perform this modification. This

modification would benefit the system since the ATM adaptation

layer performs flow control (Akiyoshi: col.1 lines 39-43).

Regarding claim 6, although the combination teaches the second leg is an ATM connection tunneling flow control information, the combination is silent on the flow control information in ATM cells in an ATM layer.

Akiyoshi teaches the flow control information in ATM cells in an ATM layer (convergence sublayer in which flow control is conducted, col.1 lines 39-43).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by performing flow control information in the ATM adaptation layer, as suggested by Akiyoshi. Adhering to ATM standards can perform this modification. This modification would benefit the system since the ATM adaptation layer performs flow control (Akiyoshi: col.1 lines 39-43).

5.   Claims 7, 18, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah in view of Shimojo, Williams (US 6,317,455), and Akiyoshi.

Regarding claims 7, 18, and 29, Chuah teac99hes transmitting data over a connection comprising a first leg supporting flow control on a lower transmission protocol level

underlying a user level (fig. 1 see connection between box 2 and

6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41), an

intermediate second leg not supporting flow control on the lower

transmission level (fig. 1 see connection Node-B 'connected to

box 2' to box 10 to box 14 to Node-B 'connected to box 4', ATM,

col. 2 lines 53-58). Note, applicant's background states ATM

does not supporting flow control on the lower transmission level

(pg. 4 line 17-18), and a third leg supporting flow control on

the lower transmission protocol level, wherein said second leg

comprises an ATM connection (fig. 1 see connection between box 4

and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-41.

Chuah teaches a first node between the first and second

legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second node between the second and third

legs (fig. 1 box 6 that is connected to box 4).

Chuah is silent on tunneling the flow control information

over the second leg.

Shimojo teaches tunneling flow control information over the

second leg (ATM, col. 1 lines 12-14)

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of Chuah by tunneling

lower level flow control information from through the ATM

network, as suggested by Shimojo. This modification can be performed according to the teachings of Shimojo. This modification would benefit by allowing for the transmission of flow control information to be transported between the first and second networks.

Although the combination teaches tunneling flow control information over the second leg, the combination is silent on an out-of-traffic-channel signaling associated with the connection.

Williams teaches flow control information using an out-of-traffic channel (col. 5 lines 32-36).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by tunneling the flow control information using an out-of-traffic channel. This modification can be performed according to the teachings of Williams. This modification would benefit the system since by having two separate channels, more bandwidth can be devoted to transmitting the data.

The combination is silent on the second leg comprises an ATM adaptation layer.

Akiyoshi teaches an ATM adaptation layer (col.1 lines 39-43).

Therefore it would have been obvious to one of ordinary
skill in the art, to modify the system of the combination by
incorporating an ATM adaptation layer, as suggested by Akiyoshi.
Adhering to ATM standards can perform this modification. This
modification would benefit the system since the ATM adaptation
layer performs flow control (Akiyoshi: col.1 lines 39-43).

6.   Claims 8-12, 19, 21, 25, and 26 are rejected under 35
U.S.C. 103(a) as being unpatentable over Chuah in view of
Shimojo, Akiyoshi, and Edholm.

Regarding claims 8, 10, 12, 19, 21, 25, and 26, Chuah
teaches transmitting data over a connection comprising a first
leg supporting flow control on a lower transmission protocol
level underlying a user level (fig. 1 see connection between box
2 and 6, WCDMA, col. 2 lines 1-5, fig. 2 LAC, col. 2 lines 39-
41), an intermediate second leg not supporting flow control on
the lower transmission level (fig. 1 see connection Node-B
'connected to box 2' to box 10 to box 14 to Node-B 'connected to
box 4', ATM, col. 2 lines 53-58). Note, applicant's background
states ATM does not supporting flow control on the lower
transmission level (pg. 4 line 17-18), and a third leg

supporting flow control on the lower transmission protocol

level, wherein said second leg comprises an ATM connection (fig.

1 see connection between box 4 and 6, WCDMA, col. 2 lines 1-5,

fig. 2 LAC, col. 2 lines 39-41.

Chuah teaches a first node between the first and second

legs (fig. 1 box 6 that is connected to box 2).

Chuah teaches a second node between the second and third

legs (fig. 1 box 6 that is connected to box 4).

Chuah teaches the second leg comprises an ATM connection

(ATM, col. 2 lines 53-58).

Chuah is silent on tunneling the flow control information

over the second leg.

Shimojo teaches tunneling flow control information over the

second leg (ATM, col. 1 lines 12-14).

Therefore it would have been obvious to one of ordinary

skill in the art, to modify the system of Chuah by tunneling

lower level flow control information from through the ATM

network, as suggested by Shimojo. This modification can be

performed according to the teachings of Shimojo. This

modification would benefit by allowing for the transmission of

flow control information to be transported between the first and

second networks.

The combination is silent on the second leg comprises an ATM adaptation layer.

Akiyoshi teaches an ATM adaptation layer (col.1 lines 39-43).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by incorporating an ATM adaptation layer, as suggested by Akiyoshi. Adhering to ATM standards can perform this modification. This modification would benefit the system since the ATM adaptation layer performs flow control (Akiyoshi: col.1 lines 39-43).

The combination is silent on recognizing at a first node between the first and second legs a need to start a flow control towards the second leg, sending a flow control ON request over the second leg, receiving the flow control ON request at a second node between the second and third legs, stopping sending new data or decreasing data rate from the second node to the first node over the second leg in response to the flow control ON request.

Edholm teaches a method for recognizing at a first node between the first and second legs a need to start a flow control

towards the second leg, sending a flow control ON request over

the second leg, receiving the flow control ON request at a

second node between the second and third legs, stopping sending

new data or decreasing data rate from the second node to the

first node over the second leg in response to the flow control

ON request (data 'off', col. 1 lines 36-44). The examiner

corresponds the applicant's 'flow control ON request' with the

data 'off' signal of the reference.

Regarding claims 9 and 11, the combination is silent on

recognizing at the first node a need of stopping the flow

control towards the second leg, sending a flow control OFF

request over the second leg, receiving the flow control OFF

request at the second node, starting sending new data or

increasing data rate from the second node to the first over the

second leg in response to said flow control off request.

Edholm teaches a method for recognizing at the first node a

need of stopping the flow control towards the second leg,

sending a flow control OFF request over the second leg,

receiving the flow control OFF request at the second node,

starting sending new data or increasing data rate from the

second node to the first over the second leg in response to said

flow control off request (data 'on', col. 1 lines 36-44). The

examiner corresponds the applicant's 'flow control OFF request' with the data 'on' signal of the reference.

Regarding claim 12, 21, 26, the combination is silent on recognizing the need for starting or stopping the flow being based on the status of a receiving or transmitting buffer in the first node or on incoming flow control information received over the first leg.

Edholm teaches recognizing the need for starting or stopping the flow being based on the status of a receiving or transmitting buffer in the first node or on incoming flow control information received over the first leg (off signal stops flow of data until data within buffer is consumed, col. 1 lines 36-44).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination of Chuah, Gerszberg, and Newton by stopping or starting the sending of data between nodes according to the teachings of Edholm. This modification can be performed in software. This modification would benefit the system by preventing overflow in the receiving buffer and allowing for the restarting of the transmission.

Allowable Subject Matter

7.   Claim 5 and 30 are allowed.

Claims 4 is objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent

form including all of the limitations of the base claim and any

intervening claims.

Response to Arguments

8.   Applicant's arguments filed 1/24/07 have been fully

considered but they are not persuasive.

The examiner disagrees with the applicant's assertion that

the cited prior art fails to teach tunneling layer two flow

information through an intermediate leg not supporting layer two

flow control (applicant: pg. 1 2nd paragraph pg. 2 last two

paragraphs). Shimojo teaches ATM. It is well known that ATM is a

layer two protocol and does not support layer two end-to-end

flow control. Furthermore, Shimojo clearly teaches two legs

supporting flow control (apparatuses having a flow control

function, col. 3 lines 48-57) and an intermediate leg not

supporting flow (large number of switch nodes not having a flow

control function between the apparatuses, col. 3 lines 48-57).

Furthermore, Shimojo teaches tunneling flow control information

between the apparatuses having a flow control function

(tunneling, apparatus having the downstream flow control

function will transmit control information to the upstream

apparatus, col. 3 lines 48-57). Note, the examiner corresponds

Shimojo's "transmit control information" to tunneling layer two

flow control since "tunnelling" is taught in the passage.

    The examiner disagrees with the applicant's assertion

that the first through third legs of Chuah do not correspond to

the applicants first through third legs (applicant: pg. 1 2nd to

last paragraph – pg. 2 3rd paragraph). As shown in Chuah,

"Particularly, a plurality of remote terminals 2 and 4

communicate with base stations via W-CDMA wireless links (fig. 1

, col. 1 lines 1-5). Thus the connections from remote terminals

2 and 4 to their respective base stations correspond to the

first and third legs respectively. Regarding the second leg,

Chuah clearly describes an ATM connection between respective

base stations (fig. 1 boxes 6). As stated in Chuah, "Layer 2 of

the core network (i.e., right side of NODE-B) transport network

layer frames, e.g. ATM" (col. 2 lines 53-58).

Conclusion

9.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the

extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action

is set to expire THREE MONTHS from the mailing date of this

action. In the event a first reply is filed within TWO MONTHS

of the mailing date of this final action and the advisory action

is not mailed until after the end of the THREE-MONTH shortened

statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated

from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than

SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Ronald

Abelson whose telephone number is (571) 272-3165. The examiner

can normally be reached on M-F.

If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Chi Pham can be reached

on (571) 272-3179. The fax phone number for the organization

where this application or proceeding is assigned is 571-273-

8300.

Information regarding the status of an application may be

obtained from the Patent Application Information Retrieval

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Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or

access to the automated information system, call 800-786-9199

(IN USA OR CANADA) or 571-272-1000.

Ronald Abelson
Examiner
Art Unit 2616

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CHI PHAM
SUPERVISORY PATENT EXAMINER   3/12/07